

## Appendix 2: Vaccination studies with lower absenteeism in vaccinated group (positive studies)

Author/s	Mixeu et al	Nichol et al.	Abbas et al.	At'kov et al.	Samad et al.	Nichol et al	Leighton et al.	Santoro et al.	Olsen et al.
Publication year	2002	1995	2006	2011	2006	2009	1996	2004	1998
Study location	Brazil	USA	Saudi Arabia	Russia	Malaysia	USA	UK	Argentina	USA
Sample population	813 airline company employees	846 workers in various companies in Minneapolis – St Paul area in Minnesota	2400 food processing & chemical industry employees	1331 Railways Public Corporation employees	1022 petrochemical plant employees	497 University of Minnesota employees aged 50-64	2557 service company employees	Ranged from 520 – 800 chemical company employees	3517 corporate, research and manufacturing-based employees
Study type	RCT	RCT	Prospective/ interventional	Prospective/ interventional	Prospective/ interventional	Prospective/ observational	Retrospective/ observational	Retrospective/ observational	Pre/post test
Study duration	Mar 1997– Oct 1997 (flu season only)	Nov 1994 – Apr 1995 (flu season only)	Jan 1994–Dec 1902 (flu season only)	Oct 2005- May 2006 (flu season only)	Mar – Oct 2001 (flu season only)	Nov 2006 – Apr 2007 (flu season only)	1 <sup>st</sup> flu season: Oct 1990 – Mar 1991  2 <sup>nd</sup> flu season: Oct 1991 – Mar 992	Jan 1994 – Dec 2002	Pre: Nov 1995- Mar 1996  Post: Nov 1996- Mar 1997 (flu seasons only)
Intervention (n)	Influenza vaccine (405)	Influenza vaccine (422)	Influenza vaccine (1396)	Influenza vaccine (701)	Influenza vaccine (504)	Vaccinated status (404)	Vaccinated status (601)	Vaccinated status (57%)	New vaccinees (2622)
Control (n)	Vaccine diluent (408)	Vaccine diluent (424)	None (1004)	None (630)	None (518)	Non-vaccinated status (93)	Non-vaccinated status (1956)	Non-vaccinated status (43%)	Consecutive vaccinees (895)
Absence outcome in vaccinated group	26% lower (p= 0.03)	43% lower (p= 0.001)	Average 0.96 fewer days per employee (p< 0.001)	Average 3 fewer days per employee (p< 0.002)	Average 1.22-day reduction in duration (p< 0.0001)	Average 0.34 fewer days per employee (p= 0.004)	Days lost per 100,000 worked reduced by 166 (p< 0.001)	81.36 ± 6.69% effectiveness rate in reducing absence	Average 1.2 hours lower per employee for new vaccinees (p< 0.05)  Average 0.7 hours more per employee for consecutive vaccinees (N.S.)
Other outcomes in vaccinated group	39.5% lower ILI incidence (p< 0.001)	25% lower URI incidence (p< 0.001)  44% lower healthcare visits (p= 0.04)	36% lower ILI incidence (p< 0.0001)	Average 2 days lower ILI duration per employee (p< 0.05)	22.17% lower ILI incidence (p value not reported)	52% reduction in ILI incidence (adjusted OR 0.42; 95% CI 0.27-0.86)	Lower overall influenza incidence (relative risk 0.46) (p= 0.0028)	75.9 ± 9.08% effectiveness rate in reducing the occurrence of ILI symptoms	N/A
Net savings per vaccinated employee	N/A	\$46.85USD	\$28USD	€2.13 - 5.43 Euro	\$53USD/vaccinated employee; \$899.7USD if operating costs also considered	N/A	N/A	200 Argentinean Pesos	N/A
Randomisation	Yes	Yes	No	No	No	No	No	No	No
Blinding	Yes	Yes	No	No	No	No	No	No	No
Data collection method	Self-report monthly	Self-report monthly	Unknown	Self-report monthly	Self-report every two months	Self-report monthly	Company database	Company database	Company database
Limitations	Limited duration	Limited duration	Limited duration	Limited duration	Limited duration  Significantly different cohort demographics	Limited duration  Self-reported vaccination status	Limited duration	Sample size not calculated  Some p values not given	Limited duration  Absenteeism reasons not known

RCT= Randomised controlled trial    USD = US dollars